

AMENDMENTS TO THE CLAIMS

Claim 1 (previously amended) A jet in flow communications with a reservoir comprising:

- 5 a substrate having a manifold for receiving fluid from the reservoir;
 an orifice layer disposed above the substrate so that a plurality of
 chambers are formed between the orifice layer and the substrate;
 and
 a plurality of nozzles that are disposed on the orifice layer and
10 correspond to the plurality of chambers for ejecting the fluid in
 the chambers so as to form a plurality of droplets, each of the
 nozzles comprising:
 an orifice formed on the orifice layer; and
 at least three distinct bubble generators electrically connected to
15 a driving circuit and disposed at a first side of the orifice
 and a second side of the orifice, at least two of the bubble
 generators disposed at one of either the first side or the
 second side, and at least one of the bubble generators
 disposed at the other of the first side and the second side,
20 the driving circuit driving the bubble generator(s) disposed
 at the first side to generate a first bubble in a corresponding
 chamber and driving the bubble generator(s) disposed at the
 second side to generate a second bubble in the
 corresponding chamber;
25 wherein the driving circuit drives the bubble generators selectively
 so that each of the nozzles is capable of ejecting droplets of different
 sizes.

- 30 **Claim 2 (original)** The jet of claim 1 wherein an interval between the
 manifold and the first side is less than an interval between the
 manifold and the second side.

Claim 3 (original) The jet of claim 2 wherein the first bubble is used as a virtual valve for restricting fluid between the first bubble and the second bubble to avoid flowing to the manifold when the second bubble is generated.

5

Claim 4 (original) The jet of claim 1 wherein each of the bubble generators is a heater, the driving circuit drives the heater(s) disposed at the first side to heat fluid in the corresponding chamber so as to generate the first bubble, and the driving circuit drives the heater(s) disposed at the second side to heat fluid in the corresponding chamber so as to generate the second bubble.

10

Claim 5 (original) The jet of claim 4 wherein an interval between the manifold and the first side is less than an interval between the manifold and the second side.

15

Claim 6 (original) The jet of claim 5 wherein the first bubble is used as a virtual valve for restricting fluid between the first bubble and the second bubble to avoid flowing to the manifold when the second bubble is generated.

20

Claim 7 (currently amended) The jet of claim 4 wherein ~~there is at least one each~~ heater disposed at the first side and either the first side or the second side is connected in series to one of the heater(s) disposed at the ~~second~~ other side, wherein ~~resistance of the heater disposed at the first side is greater than resistance of the heater disposed at the second side~~ the driving circuit is capable of independently driving or simultaneously driving each heater disposed on the same side of the orifice along with the corresponding heaters disposed on the other side of the orifice that are serially connected to the driven heaters.

25

30

Claim 8 (currently amended) The jet of ~~claim 7 wherein each of the~~
~~heater(s) disposed at the first side connects in series to one of the~~
~~heater(s) disposed at the second side~~ claim 4 wherein two heaters are
disposed on the first side and one heater is disposed on the second
5 side, each of the heaters disposed on the first side is connected in
series to the heater disposed on the second side, the driving circuit is
capable of simultaneously driving the two heaters disposed on the
first side along with the heater disposed on the second side to
generate the first and second bubbles, and the driving circuit is
10 capable of driving either one of the heaters disposed on the first side
along with the heater disposed on the second side to generate the
first and second bubbles.

Claim 9 (original) The jet of claim 7 wherein at least two heaters are
15 disposed at the first side, and each of the nozzles comprises a
leading wire for connecting one of the heater(s) disposed at the
second side with the heaters disposed at the first side, and the
driving circuit applies a voltage on at least one of the heaters
disposed at the first side to generate the first bubble and the second
20 bubble simultaneously.

Claim 10 (original) The jet of claim 7 wherein at least two heaters are
disposed at the second side, and each of the nozzles comprises a
leading wire for connecting one of the heater(s) disposed at the
25 first side with the heaters disposed at the second side, and the
driving circuit applies a voltage on at least one of the heaters
disposed at the second side to generate the first bubble and the
second bubble simultaneously.

30 Claim 11 (original) The jet of claim 4 wherein there is at least one
heater disposed at the first side connected in parallel to one of the
heater(s) disposed at the second side, wherein a resistance of the

heater disposed at the first side is less than a resistance of the heater disposed at the second side.

5 Claim 12 (original) The jet of claim 4 wherein the orifice layer comprises at least two structure layers arranged in parallel, and there is at least one heater disposed on each of the structure layers.

10 Claim 13 (original) The jet of claim 12 wherein the droplets are ejected from the orifice along an ejection direction, and at least two of the heaters are disposed on the two structure layers linearly along the ejection direction.

15 Claim 14 (original) The jet of claim 1 wherein the droplets are ejected from the orifice along an ejection direction, and the bubble generators are disposed in parallel at the first side and the second side.

20 Claim 15 (original) The jet of claim 1 wherein the bubble generator(s) disposed at the first side are arranged along a first straight line, the bubble generator(s) disposed at the second side are arranged along a second straight line, and the first straight line is parallel to the second straight line.

25 Claim 16 (currently amended) A jet in flow communication with a reservoir comprising:

an orifice disposed above the reservoir;
a first bubble generator group disposed at a first side of the orifice for generating a first bubble in the reservoir; and
a second bubble generator group disposed at a second side of the
30 orifice for generating a second bubble in the reservoir, the first bubble and the second bubble squeezing fluid between the first bubble and the second bubble out of the orifice to form a

droplet;

wherein the first bubble generator group and the second bubble generator group together comprise at least three distinct bubble generators, the first bubble generator group or the second bubble generator group comprises at least two independently drivable bubble generators for generating the first bubble or the second bubble, and the other of the first bubble generator group or the second bubble generator group comprises at least one distinct bubble generator.

10

Claim 17 (original) The jet of claim 16 wherein each of the bubble generators is a heater.

15

Claim 18 (original) The jet of claim 16 wherein an interval between the orifice and one of the two bubble generators is different from an interval between the orifice and the other one of the two bubble generators.

20

Claim 19 (previously added) The jet of claim 1 wherein a resistance value of each of the bubble generator(s) disposed at the first side is different from a resistance value of each of the bubble generator(s) disposed at the second side.

25

Claim 20 (previously added) The jet of claim 1 wherein each of the three bubble generators has a unique resistance value.

30

Claim 21 (previously added) The jet of claim 16 wherein a resistance value of each of the bubble generator(s) in the first bubble generator group is different from a resistance value of each of the bubble generator(s) in the second bubble generator group.

Claim 22 (previously added) The jet of claim 16 wherein each of the

bubble generators in the first bubble generator group and the second bubble generator group has a unique resistance value.

5 Claim 23 (previously added) The jet of claim 16 further comprising a manifold for receiving fluid from the reservoir, wherein the first bubble is used as a virtual valve to restrict fluid to avoid flowing to the manifold.

10 Claim 24 (previously added) The jet of claim 16 further comprising a driving circuit electrically connected to the bubble generators and wherein each of the bubble generators is a heater, the driving circuit drives the heater(s) disposed at the first side to heat fluid so as to generate the first bubble, and the driving circuit drives the heater(s) disposed at the second side to heat fluid so as to generate the second bubble.

15 Claim 25 (currently amended) The jet of claim 24 wherein ~~there is at least one~~ each heater disposed at ~~the first side and either the first side or the second side is~~ connected in series to one of the heater(s) disposed at the ~~second other~~ side, wherein ~~resistance of the heater disposed at the first side is greater than resistance of the heater disposed at the second side~~ the driving circuit is capable of independently driving or simultaneously driving each heater disposed on the same side of the orifice along with the corresponding heaters disposed on the other side of the orifice that are serially connected to the driven heaters.

20

25

Claim 26 (currently amended) The jet of ~~claim 25 wherein each of the heater(s) disposed at the first side connects in series to one of the heater(s) disposed at the second side~~ claim 24 wherein two heaters are disposed on the first side and one heater is disposed on the second side, each of the heaters disposed on the first side is connected in series to the heater disposed on the second side, the driving circuit is capable of simultaneously driving the two heaters

30

disposed on the first side along with the heater disposed on the second side to generate the first and second bubbles, and the driving circuit is capable of driving either one of the heaters disposed on the first side along with the heater disposed on the second side to generate the first and second bubbles.

5
10
Claim 27. (previously added) The jet of claim 25 wherein at least two heaters are disposed at the first side, the jet further comprising a leading wire for connecting one of the heater(s) disposed at the second side with the heaters disposed at the first side, and a driving circuit applies a voltage on at least one of the heaters disposed at the first side to generate the first bubble and the second bubble simultaneously.

15
20
Claim 28 (previously added) The jet of claim 25 wherein at least two heaters are disposed at the second side, the jet further comprising a leading wire for connecting one of the heater(s) disposed at the first side with the heaters disposed at the second side, and a driving circuit applies a voltage on at least one of the heaters disposed at the second side to generate the first bubble and the second bubble simultaneously.

25
Claim 29 (previously added) The jet of claim 24 wherein there is at least one heater disposed at the first side connected in parallel to one of the heater(s) disposed at the second side, wherein a resistance of the heater disposed at the first side is less than a resistance of the heater disposed at the second side.

30
Claim 30 (previously added) The jet of claim 24 wherein the orifice is formed in an orifice layer comprising at least two structure layers arranged in parallel, and there is at least one heater disposed on each of the structure layers.

5 **Claim 31 (previously added)** The jet of claim 30 wherein the droplet is ejected from the orifice along an ejection direction, and at least two of the heaters are disposed on the two structure layers linearly along the ejection direction.

10 **Claim 32 (previously added)** The jet of claim 16 wherein the droplet is ejected from the orifice along an ejection direction, and the bubble generators are disposed in parallel at the first side and the second side.

15 **Claim 33 (previously added)** The jet of claim 16 wherein the bubble generator(s) disposed at the first side are arranged along a first straight line, the bubble generator(s) disposed at the second side are arranged along a second straight line, and the first straight line is parallel to the second straight line.

20 **Claim 34 (new)** A jet in flow communication with a reservoir comprising:
 an orifice disposed above the reservoir;
 a first bubble generator group disposed at a first side of the orifice for generating a first bubble in the reservoir; and
 a second bubble generator group disposed at a second side of the orifice for generating a second bubble in the reservoir, the first bubble and the second bubble squeezing fluid between the first
25 bubble and the second bubble out of the orifice to form a droplet;
 wherein a number of bubble generators in the first bubble generator group is different from a number of bubble generators in the second bubble generator group.

30 **Claim 35 (new)** The jet of claim 34 wherein the first bubble generator group and the second bubble generator group together comprise at

least three distinct bubble generators, the first bubble generator group or the second bubble generator group comprises at least two independently drivable bubble generators for generating the first bubble or the second bubble, and the other of the first bubble generator group or the second bubble generator group comprises at least one distinct bubble generator.

Claim 36 (new) The jet of claim 35 wherein the first bubble generator group comprises two bubble generators and the second bubble generator group comprises one bubble generator.

Claim 37 (new) The jet of claim 35 wherein the first bubble generator group comprises one bubble generator and the second bubble generator group comprises two bubble generators.

Claim 38 (new) The jet of claim 34 wherein a resistance value of each bubble generator in the first bubble generator group is different from a resistance value of each bubble generator in the second bubble generator group.

Claim 39 (new) The jet of claim 34 wherein each bubble generator in the first bubble generator group and the second bubble generator group has a unique resistance value.

Claim 40 (new) The jet of claim 34 further comprising a driving circuit electrically connected to the bubble generators and wherein each bubble generator is a heater, the driving circuit drives the heater(s) disposed at the first side to heat fluid so as to generate the first bubble, and the driving circuit drives the heater(s) disposed at the second side to heat fluid so as to generate the second bubble.

Claim 41 (new) The jet of claim 40 wherein each heater disposed at

5 either the first side or the second side is connected in series to one of the heater(s) disposed at the other side, wherein the driving circuit is capable of independently driving or simultaneously driving each heater disposed on the same side of the orifice along with the corresponding heaters disposed on the other side of the orifice that are serially connected to the driven heaters.

10 Claim 42 (new) The jet of claim 40 wherein two heaters are disposed on the first side and one heater is disposed on the second side, each of the heaters disposed on the first side is connected in series to the heater disposed on the second side, the driving circuit is capable of simultaneously driving the two heaters disposed on the first side along with the heater disposed on the second side to generate the first and second bubbles, and the driving circuit is capable of driving
15 either one of the heaters disposed on the first side along with the heater disposed on the second side to generate the first and second bubbles.